Appln. No. 10/590,824 Amdt. dated April 20, 2011

Reply to Office Action of October 20, 2010

## **Amendments To The Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

- 1. (**Currently Amended**) A method to determine the position of a dental implant (2) which is fixed in the bone of the jaw (13) of a person, comprising the steps of:
- <u>after having fixed this implant into the bone of the jaw, fixing at least</u> one marker element (3) which produces a strong contrast in imaging techniques to a free end (1) of said implant (2) in a detachable manner whereby the marker element (3) is situated at a distance (d) from the free end (1),
- generating an image of the jaw or of a reproduction model of the jaw by means of X-rays or magnetic resonance, wherein the jaw contains the implant (2) with said marker element,
- determining the position of the marker element (3) in relation to the jaw on the basis of said image which is formed by said X-rays or by said magnetic resonance, and
- identifying the position of said implant (2) from the observed position of the marker element (3).
- 2. (**Previously Presented**) The method according to claim 1, further comprising the step of:

fixing a support (4) with said marker element (3) to said implant (2) in a detachable manner.

3. (**Previously Presented**) The method according to claim 2, further comprising the step of:

fixing said support (4) with the marker element (3) to the free end (1) of said implant (2), such that this support (4) extends in the prolongation of the implant (2) and the marker element (3) is situated at a distance (d) from the free end (1).

- 4. (**Previously Presented**) The method according to claim 3, wherein, the implant (2) has a central axis (10), the orientation and position of the central axis (10) being determined by defining a straight line through a centre point of said marker element (3) which is parallel to a longitudinal side (14) of the formed image of said support (4).
- 5. (**Previously Presented**) The method according to claim 3, further comprising the step of:

determining the orientation and position of the central axis (10) of the implant (2) by defining the centre of gravity of pixels representing the implant (2) or said support (4) in said image, as well as the centre of gravity of the image of said marker element (3), whereby these centres of gravity are then mutually connected by means of a straight line.

6. (**Previously Presented**) The method according to claim 5, further comprising the step of:

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determining the position of the implant (2) in relation to the jaw on the basis of the orientation and the position of the axis (10) of the implant (2) and the distance (d) between said marker element (3) and said free end (1) of the implant (2).

- 7. (**Previously Presented**) The method according to claim 1, wherein a second marker element (6) is fixed in relation to the implant (2), with a centre point which is not situated on the central axis (10) of said implant (2), wherein, on the basis of the observed position of the second marker element (6), the angular position of the implant (2) in relation to the central axis (10) is determined.
- 8. (**Previously Presented**) The method according to claim 1, wherein use is made of a spherical marker element (3, 6).
- 9. (**Previously Presented**) The method according to claim 1, wherein use is made of a marker element (3,6) which contains at least tantalum, platinum or tungsten.
- 10. (**Previously Presented**) The method according to claim 1, wherein said image is formed by means of computer tomography.

## 11-14 (Cancelled)

15. (**Currently Amended**) A support with a marker element (3,6) for determining the position of a dental implant (2) which is fixed to the jaw (13) of a person, in relation to this jaw (13), wherein the marker element (3,6) produces a strong contrast in an image generated by X-rays or magnetic resonance compared to said implant (2) itself,

wherein said support is mainly formed of a material which is transparent to X-rays.

wherein the support (4) has means at one far end to be fixed to said implant (2) in a detachable manner, whereas the other far end of the support (4) comprises said marker element (3,6),

wherein said means for fixing the support to the implant (2) comprise a securing pin (11), and

wherein the support comprises a sleeve (5) with a protrusion (15) whose dimensions correspond practically to those of a recess (8) provided in a head (1) of the implant (2) on which this support must be fixed, such that said protrusion (15) can be placed in a practically fitting manner in said recess (8),

wherein said sleeve (5) presents a second marker element (6) <u>having a</u> centre point which is not situated on the central axis of the sleeve.

- 16. (Cancelled)
- 17. (**Previously Presented**) The support according to claim 15, wherein said securing pin (11) is coaxial to the support.
- 18. (**Previously Presented**) The support according to claim 15, wherein said securing pin (11) is externally threaded.
- 19. (**Previously Presented**) The support according to claim 15, wherein said marker element (3,6) contains at least one of the metals from the group formed of tantalum, platinum and tungsten.

## 20. (Cancelled)

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21. (**Previously Presented**) The method according to claim 2, wherein said support is made of a material which is transparent to X-rays.

22. (**Previously Presented**) The method according to claim 1, wherein the step of determining the position of the dental implant in relation to the jaw comprises calculating an exact position of the implant on a longitudinal axis of the implant on the basis of a previously determined distance between the marker element and the free end of the implant.

23. (**New**) The method according to claim 1, wherein the position of a dental implant (2) made of titanium is determined.